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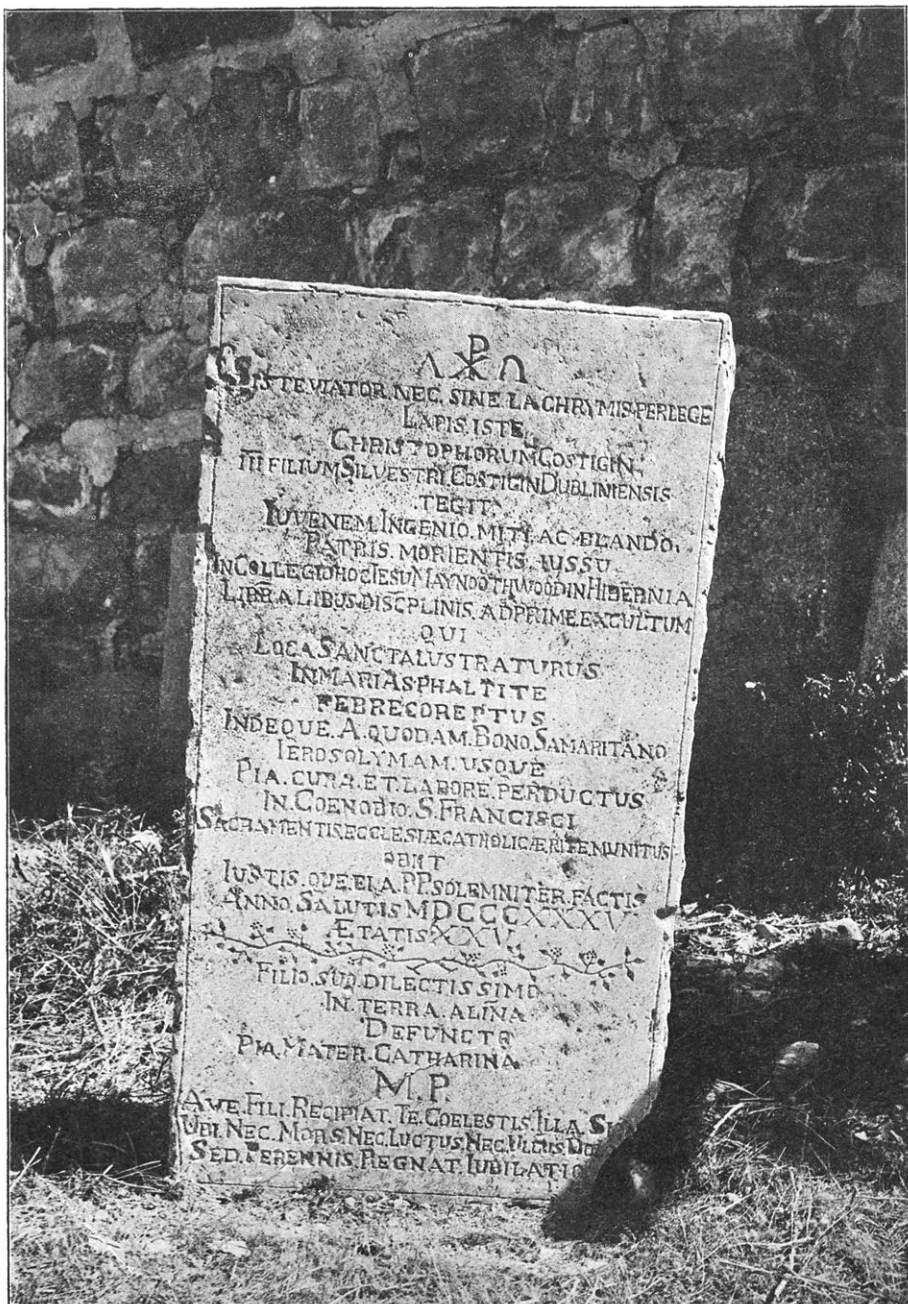
EXPLORATIONS IN THE DEAD SEA VALLEY

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In my preceding paper I indicated the physical history of the remarkable Dead Sea valley. I venture now to describe the three great expeditions of the nineteenth century which attempted, with some measure of success, to explore this strange region. They were not without tragedy and misfortune. The better knowledge we have of the climate and geography of this region, the improved means of communication, and the firmer control obtained by the Turkish government over the bedouins, have now entirely altered the conditions of sixty years ago. Those early expeditions will therefore always have a unique interest. The causes of the first failures are now so clear that we might be tempted to condemn as mere foolhardiness the first of these efforts; but a more sympathetic attitude, and a full allowance for the imperfect knowledge of this region at those times, will rather class them with similar heroic ventures of pioneer explorers in all climes.

The first of these expeditions was that of an Irishman, Mr. Costigan, who in August and September, 1835, attempted single-handed to do what twelve years later strained the resources of an expensive and elaborately equipped United States naval expedition.

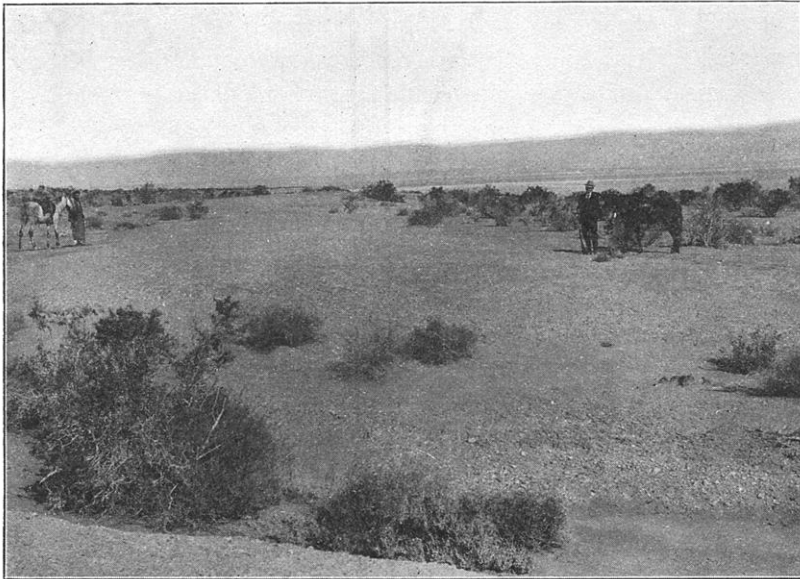
Costigan conveyed his boat from the bay of Acre overland to Tiberias, and with a single Maltese servant, no more a sailor than himself, attempted the navigation of the Jordan southward toward the Dead Sea. He could hardly have chosen a more unfortunate time of year, as it was at once the hottest season and that in which the river was at its lowest. After three days' struggling down a long succession of waterfalls and rapids, in which he was more often in the water than upon it, his servant so entirely lost his patience and nerve that Costigan was obliged, although the worst difficulties were past, to abandon navigation. Sending his other baggage to Jerusalem,



GRAVESTONE OF MR. COSTIGAN IN ROMAN CATHOLIC CEMETERY, JERUSALEM

he procured an escort of bedouins, and carried his boat to Jericho on a camel.

On the road he appears to have escaped being robbed only by the attacking party apparently taking him for a madman. For while a number of hostile Arabs were assembled ready for attack, Costigan's horse ran away with him and carried him, wildly gesticulating, toward them at full gallop, whereupon the whole party turned

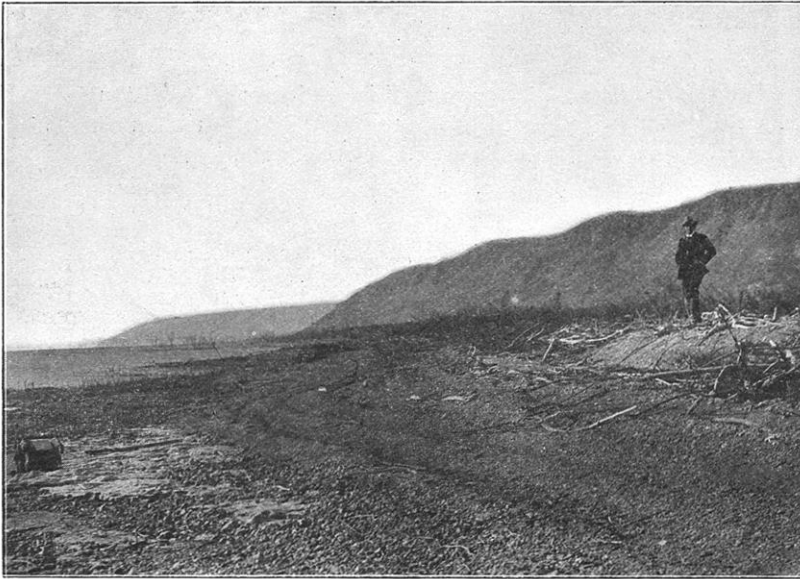


VIEW ALONG NORTH SHORE OF DEAD SEA
Showing a "raised beach." Mountains of Moab in the distance.

and fled! At Jericho he arrived tattered and bedraggled, but undaunted: after visiting Jerusalem and recovering somewhat, he at the end of August started on the second, and still more unfortunate, stage of his exploration. Leaving the northern shore of the Dead Sea, with his servant as his sole companion, he sailed slowly down the whole eastern coast and soon reached the Lisan.

Here, as so often happens, the wind failed, and they were quite becalmed. They were obliged to commence to work their way northward by rowing. The fearful heat, the hard work and anxiety were bad enough. But one day while Costigan slept, the servant,

tired of rowing so heavy a boat, sought to lighten his labors by throwing overboard the sole supply of fresh water. Their sufferings now became terrible. They dared not land at the two or three green spots where they might have obtained fresh water, because of the bedouins. In this they were certainly overcautious, and fatally so. They both suffered from fever; one whole day Costigan, who had



NORTH SHORE OF DEAD SEA

Looking westward. The ridges made in the shingle are the highest level attained in successive seasons

had no previous experience at rowing, had to work at the oars while the servant lay tossing with fever at the bottom of the boat.

At last, on the fifth day, they reached the north shore in a terrible condition. There was no water to assuage their raging thirst. They were in high fever and blistered all over from having poured the Dead Sea water over their clothes to cool themselves. For the succeeding night and the greater part of the next day they could not stir. But at length the servant set out for Jericho. More than seven times he fainted by the way; at length, after struggling along several hours, he reached his destination and dispatched help to his unfortunate master. With the greatest difficulty Costigan was mounted on a

horse and brought into Jericho, where he was received into one of the hovels of the Arabs. This was on September 2, 1835. In the evening of that day he sent his servant to Jerusalem to secure help from the governor, but the man appears to have failed Costigan entirely. On the evening of the next day (September 3) a messenger, mounted on Mr. Costigan's own horse, arrived at the home of Rev. T. Nicolayson, the English clergyman in Jerusalem, with the following letter:

MY DEAR SIR:

For God's sake send me some medicine and emetic above all things. I cannot rise from my bed, and if I pass two such nights as the last without aid or medicine, you will have to do something else for me!

Yours,
(Signed) C. C.

Mr. Nicolayson started at once and rode all night to Jericho. He found the explorer lying in the open air in a state of extreme exhaustion after a severe run of fever. The whole day was spent, amid a scorching sandstorm, in contriving means of conveying the poor invalid to Jerusalem. Neither promises nor threats could induce the lazy Jericho Arabs to bestir themselves, and no one could be persuaded to assist in carrying a litter.

At length, at the suggestion of an old woman, who showed more kind-heartedness and intelligence than all the men, two bags of straw were slung on the sides of a pack saddle so as to form a hollow on the back of the horse. On this was spread a large fur cloak, and a couple of cushions were fixed on the neck of the horse to receive Mr. Costigan's head. About 9 P. M. the party started, the patient reclining on his improvised couch with two men supporting his legs and a third leading the horse. With many halts, the toilsome journey was performed, and Jerusalem was reached at 8 A. M. Here the explorer found a comfortable resting-place in the Casa Nuova, where the physician of the pasha attended him. But not for long. The next evening the fever returned with renewed violence, and on Monday, September 7, at 3 A. M. he breathed his last. His remains rest in the cemetery attached to the Latin Convent.¹ Impulsive and brave, Costigan had perished for want of a little foresight and preparation.

¹See frontispiece.

Sad to say, no notes whatever were found among his effects. The source of my information for Costigan's adventures in the above paper is entirely a manuscript account by Miss Nicolayson, in the minutes of the Jerusalem Literary Society. These notes were written in 1850 from information supplied by Rev. T. Nicolayson (then living), and, as far as they go, may be relied upon as correct. Since this, however, I have come upon some further information supplementary to this which I think I ought to refer to here. In *Incidents of Travel in the Holy Land, etc.*, by J. L. Stephens (1839), I find the following remarks:

When the unhappy Costigan was found by the Arabs on the shore of the Dead Sea, the spirit of the enterprising Irishman was fast fleeing away. He lived two days after he was carried to the convent in Jerusalem, but he never once referred to his unfortunate voyage. He had long been a traveler in the East, and had long been preparing for this voyage. He had read every book that treated of the mysterious water, the Dead Sea, and was thoroughly prepared with all the knowledge necessary for exploring it to advantage. Unfortunately for the interests of science, he had always been in the habit of trusting greatly to his memory. After his death the missionaries in Jerusalem found no regular diary or journal, but merely brief notes written on the margins of books, so irregular and confused that they could make nothing of them. And either from indifference, or because they had no confidence in him, they allowed Costigan's servant to go without asking him any questions. I took some pains to trace out this man in Beirût. He was a little dried up Maltese sailor. He said he had rowed around the sea without knowing why, except that he was paid for it, and what he told me bore the stamp of truth, for he did not seem to think that he had done anything extraordinary. He knew as little about it as any man could know who had been over the same water. . . . He seemed, however, to have observed the coast and the soundings with the eye of a sailor.

He states that they were eight days in accomplishing the *whole tour of the lake* sleeping every night on shore except once, when afraid of some suspicious Arabs whom they saw on the mountains, they slept on board beyond the reach of gunshot from the land. He told me that they had moved in a zigzag direction, crossing and recrossing the lake several times; that every day they sounded frequently with a line of 175 brachia (about six feet each); that they found the bottom rocky and of very unequal depth, sometimes ranging thirty, forty, eighty, twenty brachia, all within a few boat's lengths; that sometimes the lead brought up sand like that of the mountains on each side; that they failed to find the bottom but once, and in that place there were large bubbles all around for thirty paces, rising probably from a spring; that at one place they found on the bank a hot sulphur spring. . . . He told me some other particulars; that the boat,

when empty, floated a palm higher out of the water than on the Mediterranean; that Costigan lay on the water and picked a fowl, and tried to induce him [the sailor] to come in [into the water]; . . . that from nine till five it was dreadfully hot, and every night a north wind blew, and the waves were worse than in the Gulf of Lyons. In reference to their peculiar exposures, and the circumstances that hurried poor Costigan to his unhappy fate, he said that they had suffered exceedingly from the heat, the first five days Costigan taking his turn at the oars; that on the sixth day their water was exhausted and Costigan gave out; that on the seventh day they were obliged to drink the water of the sea, and on the eighth they were near the head of the lake and he himself was exhausted, unable any longer to pull an oar. Then he made coffee from the water of the sea; and a favorable wind springing up for the first time, they hoisted their sail and in a few hours reached the head of the lake; that, feeble as he was, he set off for Jericho, and in the meantime the unhappy Costigan was found by the Arabs on the shore a dying man, and by the intercession of the old woman, carried to Jericho.

It will be noticed that there are several discrepancies in the two accounts, but in the main facts they agree. This latter narrative is important as making the expedition much more rational and purposeful. The first account says nothing of scientific observations. It seems too clear that the Maltese man at any rate claimed to be a sailor. The closing sentences are probably a mistake.

Just nine years after the sad and tragic occurrences just narrated, a second, and somewhat more successful, expedition over the same route was made, led by Lieutenant Molyneux of H. M. S. "Spartan."² This frigate was then lying at Beirût, and Lieutenant Molyneux got permission to take the ship's dingey, with three picked able scamen, who had had previous experience of exploration in Australia, and a full supply of all necessary nautical instruments. They landed at the bay of Acre, and their boat was conveyed by camels to Tiberias and there launched. From the Lake of Tiberias the party, now augmented by two natives who had joined the naval officer and his men at Tiberias, started August 23, 1847, down the Jordan.

From the first their progress was one of great difficulty. The water was at its lowest, and after the first mile from the lake for seven hours they "scarcely ever had sufficient water to swim the boat for a

² Most of my information regarding this expedition had been derived from an account contained in a manuscript by Mr. Finn, H. B. M.'s consul in Jerusalem, in the minutes of the Jerusalem Literary Society (1850).

hundred yards together." On the 26th they were obliged to give up navigation and carry the boat on camels as far as Jisr el Mujāmiā; thence Molyneux rode on the bank, directing the seamen and their native assistants how to steer. In the tortuous windings of the river it necessarily happened that on many occasions he lost sight of the boat altogether.

While progressing under these circumstances, the whole party



PART OF THE 'AIN FESHKHAH OASIS
Looking out across the sea toward the west.

was simultaneously attacked on the 29th at a point a little beyond where the Zerka (Jabbok) joins the Jordan. Molyneux warned off his attackers by threats, and proceeded to the evening rendezvous in ignorance of the fate that had overtaken his companions. After long waiting in vain for the boat, the dragoman was sent back and found it lying in the river empty, and on the shore near at hand lay the guide from Tiberias, stripped naked. The sailors had disappeared entirely. The guide narrated that the boat had, at a certain bend in the river, been surrounded by about fifty Arabs firing muskets and throwing stones; that one of the Englishmen,

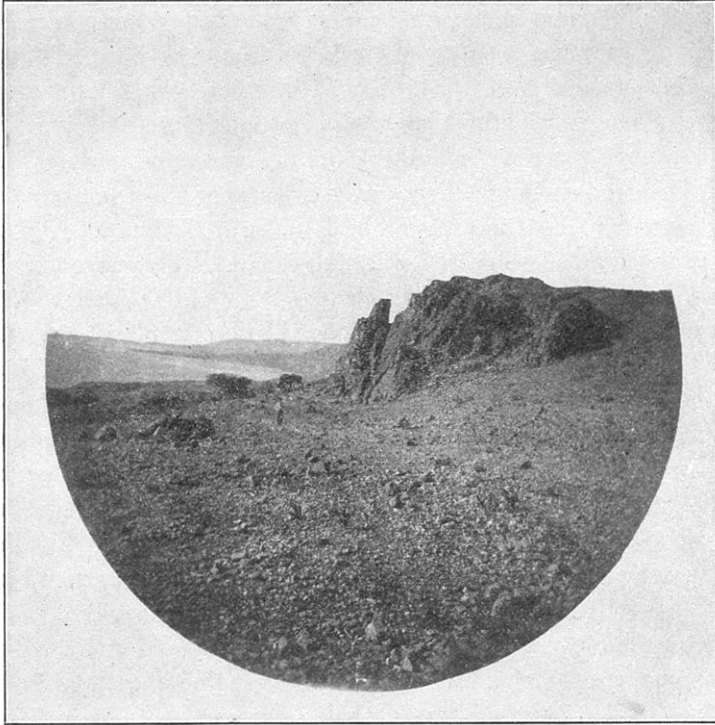
having leveled his musket to fire, was at that moment struck on the forehead and fell into the water. The whole party of Arabs thereupon made a united onslaught, seized the party, and, having carried them all into the thicket, had stripped them of their possessions.

After prolonged search and repeated signaling, all in vain, Molyneux decided to make his way southward. The boat, which had now been brought far enough down the river for easy navigation, he directed should be rowed down by the native guides. He himself proceeded direct to Jericho, arriving with the baggage in the early morning. Here he rested for a couple of hours, the first time for three days and nights. When he heard of the safe arrival of the boat on the lower reaches of the Jordan, he went up to Jerusalem to obtain help. As he neared the Holy City, he met H. B. M.'s consul, Mr. Finn, actually on the road to assist him. Hearing of the disaster the consul turned back with Molyneux and at once approached the pasha. A guard of ten bashi-bezuks, under a captain—one Mustapha Agha—was at once put at their disposal, and the next morning (September 1) they started for Jericho. After a short rest there, they set out at 1 A. M., September 2, to scour the Jeriche plain to the north for traces of the lost sailors; after a fruitless ride almost as far north as the Jabbok, they at last decided to return to Jericho, which they reached after twelve hours in the saddle.

It may be as well to mention at once what had really happened to the unfortunate sailors. The poor fellows had wandered about one whole day in search of their officer; not finding him, they had then made for Tiberias, the last town they had seen. This place they reached the third day. Two of them had had to carry their wounded companion all the time. They had suffered intensely from thirst, as they were afraid again to approach the Jordan itself; and this, as well as fear of the Arabs, had compelled them chiefly to travel by moonlight. At Tiberias they appear to have been kindly treated, and they shortly afterward rejoined their ship at Beirût.

Meanwhile Lieutenant Molyneux, undaunted by the difficulties and discouragements that had occurred, determined to continue his explorations. He had his boat conveyed to the mouth of the Jordan, where he formed a temporary camp. At 6 P. M., September 3, accompanied by his Tiberias guide and a Greek from Jerusalem,

he set sail on the Dea Sea. This, as has been mentioned, is a favorable time for sailing southward. Molyneux, more fortunate than his predecessor, found also a favorable breeze for his return. He, in two nights and a day and a half, went to the Lisan and back, landing again on the north shore at noon, September 5. The thermometer



WEST SHORE OF DEAD SEA

From Engedi to Masada. (Photographed by Rev. Putnam Cady, F. R. G. S.³)

is said to have reached 130° F., and part of the time the crew sustained rough weather.

The next day Molyneux carried the dingey on camel-back to Jericho, where he found awaiting him the British consul and several of his brother officers of H. M. S. "Spartan," who had run over from Jaffa to greet him. The whole party returned to Jerusalem, and on

³ The pictures on pp. 254 and 255 of the April number were also furnished by Mr. Cady.

the 10th left for Jaffa. So far, in spite of what had happened to the seaman, the expedition had not been without success; the officer in command, the seamen, and the boat had all got off safely. Molyneux, however, as he embarked stated to the consul: "Yes I am doing well now—no fever yet—but when I am on board and the excitement is over I shall catch it!" His premonition was verified: in a little over three weeks, on October 3, he died of fever in Beirût.

These two tragic pioneer attempts paved the way for the great American expedition of 1848. The first failures had been due to insufficient preparation, want of a guard against those rapacious and, at that time, dangerous marauders, the bedouins, and perhaps most of all the selection (in ignorance of the climate) of the worst season of the year, when the Dea Sea valley is a veritable furnace and the Jordan reduced to its lowest level. All these mistakes were guarded against in the new attempt.

Lieutenant Lynch's expedition landed at Acre, March 31, 1848, from the American storeship "Supply." The staff consisted of Lieutenants Lynch (in command) and J. B. Dale, Midshipman R. Aulick, Dr. Anderson, Mr. Francis Lynch, a botanist, and ten able seamen, one of whom was a trained mechanic. Soon after landing, the party put themselves under the protection of the most powerful bedouin chief of the day, Arkēly Agha, a man who in all the district had more power and authority than the whole Turkish administration. He and his followers protected the expedition from first to last. With this party were carried two specially constructed boats: one a copper boat, named the "Fanny Mason;" the other an iron boat, the "Fanny Skinner." At Tiberias a small wooden boat, called "Uncle Sam," was added to the flotilla; this, however, came to grief in the rapids of the Jordan soon after starting.

On April 10th the imposing procession, three boats by water and a party of no less than thirty horsemen along the banks, started from the outlet of the Jordan. What a contrast to poor Costigan and his solitary Maltese! Lynch himself took charge of one boat and Midshipman Aulick took charge of a second, while Lieutenant Dale commanded the land forces. After great difficulties and through indefatigable perseverance, the two metal boats traversed the numerous cataracts, rapids, and waterfalls, and finally, on April 19, safely

reached the Dead Sea, having descended about two hundred miles of river.

The party then navigated the Dead Sea⁴ in all parts from this date until May 9. Its shores were surveyed, its depths sounded, and temperatures taken. Careful geological, botanical, and meteorological observations were made. The party experienced the vicissitudes of storm and calm, and especially were oppressed by the sweltering heat. But all manfully stuck to their posts. After quitting the region, most of the party suffered from fever. Later Lieutenant Dale, on July 24, succumbed in the Lebanon to the privations he had here undergone.

One may safely say that more knowledge of the Dead Sea was acquired by this one expedition of Lieutenant Lynch than had been gained by the previous ventures. On the foundations then laid all our subsequent knowledge is built. Many have come since to add information whose researches are fully accessible to all. The names of de Saulcy,⁵ Rob-Roy Macgregor,⁶ Tristram⁷, Lartet,⁸ and the Duke of Luynes, and Hull,⁹ of the Palestine Exploration Fund,¹⁰ must ever be remembered in connection with the exploration of the Jordan valley in the latter half of the nineteenth century, as Costigan, Molyneux, and Lynch are to be remembered for their work in the earlier years.

⁴ My account of this expedition is intentionally scanty, because a full and most interesting description is given in the *Narrative of the U. S. Expedition to the River Jordan and the Dead Sea*, to which those interested are referred.

⁵ *Narrative of a Journey round the Dead Sea* (translated from the French). (2 vols., 1854.)

⁶ *Rob-Roy on the Jordan* (1869; specially valuable with regard to the upper Jordan and Lake Huleh).

⁷ *Land of Israel* (1886); etc.

⁸ *Exploration géologique de la Mer Morte* (account of a scientific expedition financed by the Duke de Luynes in the early seventies).

⁹ *Geology of Palestine and Arabia Petræa*.

¹⁰ Many other names might be mentioned in connection with the survey, especially Kitchener, Conder, and Wilson.